DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
WESTERN REGIONAL OFFICE

Branch of Environmental Management
P.O. Box 10
Phoenix, AZ 85001-0010
Phone: (602) 379-3491
Fax No.: (602) 379-3765

WTR-9

Fax

To: Elizabeth Jones From: John Krause

Fax: 415-947-3549 Pages: 1 of 33

Phone: Dates:

Re: Correspondence regarding petroleum related spill injection well @ Owyhee Cc:

☐ Urgent ☒ For Review ☐ Please Comment ☐ Please Reply

☒ Comments:

Hard to believe - last correspondence by BIA was 10-6-1997 to EPA preceded by 5-21-97 to EPA, 11-15-96 to Tribe, 12-14-95 to Tribe & 6-21-95 to EPA.

I need to describe the activities since then.
Also attached is letter from SECOR dated 7-21-05 to EPA.
A voluminous report is attached with this letter -
Additionally, in 2003, I compiled the expenditures at the site (also attached) (includes issues unrelated to Order)

SECOR
SECOR INTERNATIONAL INCORPORATED
www.secor.com

July 21, 2005
SECOR Project No. 93OT.02157.00

Mr. David Albright
U.S. EPA – Groundwater Office (WTR-9)
75 Hawthorne Street
San Francisco, California 94105

RE: Emergency Order issued to the Bureau of Indian Affairs
(Docket No. UIC-EO-95-001; Dated June 16, 1995)
Duck Valley Indian Reservation
Owyhee, Nevada

Dear Mr. Albright:

On behalf of its client, the United States Department of the Interior, Bureau of Indian Affairs, (BIA), *SECOR* International Incorporated (*SECOR*) is pleased to present this letter report documenting the excavation, removal and disposal (abandonment) of an identified disposal well at the Duck Valley Indian Reservation in the town of Owyhee, Nevada (**Figure 1**). This letter report presents a brief structure specific history and the effort taken to gain closure.

On June 16, 1995 the BIA received a letter issued by the United State Environmental Protection Agency (EPA) Drinking Water Protection Branch citing the use of a shallow injection well at the road shop maintenance facility in Owyhee, Nevada (**Appendix A**). The floor drain and related components were identified in the Emergency Order as an unregistered disposal well subject to the provisions of the UIC program under the authority of EPA. Furthermore, the Order issued to BIA required submittal of an investigation work plan covering 13 elements that addressed sampling, investigation, characterization, and remediation of the disposal wellsite.

The following letter report presents the findings from implementation of elements prescribed in the Order with regards to the disposal well (Sections 21-27, point *A, Closure of Disposal Well*). The following prescribed actions were conducted in accordance with the BIA work plan (SECOR, 1999).

The characterization and mitigation of the disposal well structure occurred during two separate events. The first event in 1999 included investigation and removal of the discharge line (disposal well) from areas exterior to former BIA Road Shop (building #323). The interior of building #323 at this time was inaccessible due to asbestos abatement efforts. The area was inaccessible to SECOR personnel and therefore no soil investigation of the interior pipe route was performed at that time. The discharge pipeline on the interior of building #323 was closed in place by filling the pipe, under pressure, with a concrete grout. Subsequently, the building structure was removed following the asbestos mitigation activities allowing unrestricted access by SECOR during the second investigation (September 2004).

1999 Drain Line Removal and Soil Excavation Event

In June 1999, SECOR conducted soil investigations in conjunction with excavation and removal activities related to multiple areas of concern throughout the town of Owyhee. During onsite activities, SECOR excavated and removed the exterior portions of the pipe route and discharge line outfall of disposal well system. The disposal well was found to consist of a two-inch diameter discharge pipeline located inside Building #323, which extended from the floor drain inside the building to the outlet of the line approximately 85 feet west of the line's exit from the west wall of the building (**Figure 2**). The horizontal pipe run connected to the floor drain terminated west of the road shop facility approximately three feet below ground surface (bgs) without a vertical component. Groundwater at this location during the excavation activities occurred at approximately 7.5 feet bgs (approximately 4.5 feet below the pipe outlet). The floor drain connected to the two-inch pipeline approximately 2.5 to 3.0 feet bgs and utilized hydraulic head and gravity flow as the mechanism for injection. The pipeline was used to discharge liquids from the road shop building to native soil in the outlet area. No means of containing or treating the waste was provided at the pipe outlet. The entire discharge pipeline outside the Road Shop building was excavated and removed. The end of the discharge pipe going into the building was sealed with a concrete-based grout and left in-place. Remediation efforts at the drain line discharge consisted of excavation and removal of impacted soil (and the pipe).

The exact types of liquids historically discharged through the pipeline are unknown, although sludge removed from the inside pipeline was oily and black, and emitted a petroleum odor (**Appendix B, Photolog, Photo #1**). Soil excavated from just below the discharge outlet (excavation D8) was similarly impacted, and a pocket of visually impacted area was excavated at approximately six feet bgs (**Appendix B, Photolog, Photo #2**). Soil chemical analytical results from sample locations D4 and D8 indicate that oil, diesel, and gasoline range petroleum products were potentially discharged through the pipeline at some time. Some light surface staining was observed to the south of the discharge outlet, and the soil in this area was excavated to an average depth of one foot bgs (excavation D8A, **Figure 2**). OVM measurements collected throughout the completed D8A excavation indicated that observed petroleum-impacted surface soil was removed.

Figure 2 presents the locations of excavation and sample collection as well as provides the chemical analytical results of soil samples collected under the excavated discharge pipeline and outlet, designated by a "D" prefix. Summaries of results from soil chemical analyses for TPH/BTEX and VOCs/SVOCs are provided in **Table 1 and Table 2**, respectively. A summary of results from field monitoring of soil organic vapors are provided in **Table 3**. Soil metals results are provided in **Table 4**. The laboratory analytical reports for soil are provided in **Appendix C**. A brief summary of the sampling and removal activities is presented below.

Soil observed to be impacted in the direct area of the discharge outlet (D8 and D9) was excavated and removed. Approximately 50 cubic yards of impacted soil were excavated and removed from the discharge outlet area. Debris, including plywood and concrete, was also removed from the excavation. The vertical extent of contamination to soil was limited to between six and 6.5 feet bgs. Soil confirmation samples were collected from the bottom of the excavation between seven and seven and a half feet bgs. The presence of the loose sand and groundwater precluded deeper excavation and soil sampling, due to caving of side walls. The removal of observed impacted soil in the outlet area is supported by the confirmation sample analytical results for D8 and D9 and by OVM measurements which are presented in Table 3. Each sample submitted to the laboratory during the 1999 field activities was analyzed for TPH purgeable and extractable, VOCs (including BTEX) and SVOCs by EPA Methods 8015M, 8240, and 8270 respectively.

Sample locations D4, D5, D7, D10, and D11, which were soil confirmation samples collected at 4.5 to 5.0 feet bgs along the discharge pipeline after excavation was complete. The analytical results indicate that relatively light impact to soil from petroleum hydrocarbons (TPH-d from 3.0 to 450 mg/kg) remains below the excavated pipeline along most of the run from the building exit to just before the outlet area. Approximately 25 feet east of the outlet; however, at 5.0 feet bgs, soil exhibit higher concentrations (5,200 mg/kg TPH-d at D7), in an estimated area shown on **Figure 2.** This is the area where a former 5,000-gallon diesel fuel AST was located. The soil confirmation sample results are supported by field OVM measurements in the area.

Nine water quality samples (G1, and G4 through G11) were collected from locations surrounding the discharge pipe outlet using direct push technology (**Figure 2, Detail #1**). The purpose of these samples was to determine if petroleum contamination exists in groundwater at this location that may be attributed to the discharge pipeline. The samples collected were submitted to the laboratory to be analyzed for TPH-d, TPH-g, BTEX, and SVOCs by EPA Methods 8015M (TPH-d and TPH-g), 8240, and 8270 respectively. Eight of the nine locations sampled exhibited concentrations below the laboratory detection limits for the target analytes. One sample collected from location G4, exhibited a concentration of 70µg/L as TPH-g. This location is directly down gradient (groundwater flow direction is north at this portion of the site) of the former AST location and evidence indicates that this observed groundwater impact is not associated with soil contamination originating from the discharge pipeline.

Following removal of the disposal well, soil sampling and over-excavation, all excavations were backfilled and compacted using clean imported Type II engineered fill and clean native soil removed from the excavation. The backfill material was placed in uniform lifts not exceeding one foot and mechanically compacted to a minimum of 90 percent relative compaction.

September 2004 Soil Investigation

Prior to this soil investigation, all of the buildings and foundations were removed following asbestos abatement activities, allowing accessibility to areas that formerly were inaccessible. Six discrete samples were collected from the Road Shop former drain line route.

Prior to sampling, the site was laid out using old site maps, assistance from site representatives familiar with the history of the area, and remaining landmarks (**Figure 2**). The former foundation of Building 323 was marked with stakes, as was the location of the former drain line. Sample locations were assigned and marked along the former drain line. The goal was to collect soil samples in the areas that likely represent the worst case scenario, which included anywhere piping joints would have occurred (at the start and end of the drain line, at bends, and corners).

Soil sampling at the Road Shop Former Building 323 drain line sampling consisted of collecting six discrete primary samples and one QC duplicate (or split) sample from near surface soils along a former drain line located within the former Building 323. SECOR personnel, using a hand auger, collected samples from six inches to three feet below the previously scraped area (it is anticipated that this correlates to a depth of two to five feet below the native ground surface). Each sample has been analyzed for TPH purgeable and extractable by EPA Method 8015M, VOCs by EPA Method 8260 and SVOCs by EPA Method 8270. Additional soil was collected and placed in containers for potential analyses of herbicides by EPA Method 8151A. The QC sample was collected from the location that the former drain line made a 90° turn.

All samples were properly packaged, preserved, and shipped under chain of custody to Severn Trent Laboratories (STL)-Sacramento at the following address:

STL-Sacramento
Attn: Karen Dahl
880 Riverside Parkway
West Sacramento, CA 95605
Phone: 916-373-5600
Fax: 916-372-1059

A note was added to the chain-of-custody indicating that the sample containing the highest overall concentration of TPH (RSA-5) should be analyzed for herbicides by EPA Method 8151A (the other samples were disposed of by the laboratory without analysis).

No remedial action levels have been set for this site. The Industrial and Residential Preliminary Remediation Goals (PRGs) established by Region IV EPA are used as a basis of comparison for concentrations observed during sampling. The State of Nevada Action level will be used for these compounds (TPH-g and TPH-d). The action level and PRGs are not intended as a remediation goal but only a comparison to established concentrations of the constituents investigated.

As mentioned above the PRGs for both the Residential and Industrial scenarios are used for the purpose of comparison and the basis for the following discussion. Soil samples RSA-1 through RSA-6 were analyzed for TPH-g, TPH-d, VOCs, and SVOCs using EPA Methods 8015M, 8260, and 8270 respectively. SECOR used these results to select the appropriate sample (RSA-5) to have further analyzed for herbicides using EPA Method 8151A. The results of the analysis for TPH and SVOCs have been tabulated and are presented in Table 5. Analysis of RSA-5 for herbicides resulted in concentration below the laboratory reporting limits for all compounds included within the 8151A suite. The laboratory results for these analyses are provided in **Appendix C** to this report.

SUMMARY OF RESULTS AND CONCLUSIONS

Based on the observations and data collected during this study, *SECOR* presents the following results and conclusions:

- The disposal well structure (floor drains and associated piping) were removed where possible and closured in place when removal was unfeasible. Closure in-place consisted of pumping a concrete grout mixture into the pipe annular space under pressure and capping the ends of the pipe.

- The length of the pipe route was investigated to determine where soil impacts exceeded remediation action levels. These impacted soils were over-excavated to successfully remove the contamination which is supported by the results of confirmation sampling.

- Approximately 50 cubic yards of impacted soil was over-excavated and removed from the area of the discharge pipe outfall (pipe terminus). This activity was successful in removing the contamination at this location which is supported by the results of confirmation sampling.

- Nine groundwater samples in a grid surrounding the discharge point of the injection well indicate that groundwater is not impacted above the detection limits of the analysis.

- One sample (RSA-3) was screened for the presence of dioxins and furans using the Calix methodology, due to the presence of Dinoseb at an unrelated location. The results of this

screening indicated no detectable concentrations for target analytes.

- A subsequent soil investigation conducted in 2004 further investigated the disposal well structure for potential presence of contamination beneath inaccessible portions of the drain line within the road shop. Results of the soil sampling at these locations provide no evidence of significant soil contamination in excess of the laboratory reporting limits with exception of one location (see next bullet).

- Sample location RSA-5 collected during the 2004 investigation from an approximate depth of 2.0 to 4.0 feet bgs was the only sample that exhibited concentrations exceeding remediation action levels for any target analytes (180 mg/kg of TPH-d). This result exceeds the NDEP action level for TPH-d in soil (100 mg/kg).

LIMITATIONS

SECOR's investigation has been performed with the degree of skill generally exercised by geologists and engineers common to our local area. *SECOR* makes no other warranty, either expressed or implied, concerning the conclusions and professional advice contained within the body of this report.

As with most projects performed in a heterogeneous subsurface environment, continuing assessments and excavation may reveal findings that are different than those presented herein. This facet of the environmental profession should be considered when basing professional opinions on the limited data collected on these projects.

If you have any questions or comments, please feel free to contact the undersigned at your convenience.

Respectfully,

SECOR International Incorporated

Prepared by:

Bradley Kucera, E.I.T.
Project Engineer

Reviewed by:

Doug Martin, CEM
Principle Scientist

CC: John Krause, file

Attachments:

Figure 1: Site Location Map
Figure 2 Road Shop Site Vicinity Map, Sampling Locations and Results
Table 1: Soil Sample Analytical Results TPH, BTEX and VOA's
Table 2: Soil Sample Analytical Results: SVOAs
Table 3: Soil Sample Organic Vapor Results
Table 4: Soil Sample Metals Results
Table 5: Groundwater Sample Analytical Results TPH and BTEX
Table 6: Groundwater Sample Analytical Results VOA and SVOA
Table 7: Groundwater Sample Metals Results
Table 8: Analytical Results for Detected COCs in Road Shop A Soil Samples

Appendix A: Emergency Order issued to the Bureau of Indian Affairs
Appendix B: Photolog
Appendix C: Laboratory Reports and Chain-of-Custody

ENVIRONMENTAL CERTIFICATION JURAT

This Disposal Well Removal Report for the BIA facility located in Owyhee, Nevada, has been prepared in accordance with Nevada Administrative Code (NAC), Chapter 459, Section 9717.

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all applicable federal, state and local statutes, regulations and ordinances.

Doug Martin

Doug Martin, C.E.M.
Principle Scientist
Nevada Environmental Manager EM-1076 (Expires 11/23/06)

SECOR International Incorporated
1535 Hot Springs Road, Suite 3, Carson City, Nevada 89706
(775) 884-4561 ~ (775) 884-4555 *fax*

History of Environmental Projects in the Community of Owyhee, Nevada

May 8, 2003

by John F. Krause
Regional Environmental Scientist
Branch of Environmental Management
Western Regional Office
P.O. Box 10
Phoenix, AZ 85001
602-379-3491 (Telephone)
602-379-3765 (FAX)

Fiscal Year 1994

May 12, 1994 - Initial visit to Owyhee, Nevada and tour of Federal Facilities	
Solid Waste Landfill Closures	$10,300
Hazardous Materials Assessment	$3,420
Solid Waste Landfill Surveys	$6,000
September, 1994 - Assessment and removal of Hazardous Materials	$60,000

Fiscal Year 1995

December 1994 - Completion of BIA Study
February, 1995 - Characterization of
Hazardous Materials ($24,830) ($2,420)
September, 1995 - Disposal of
Hazardous Materials ($16,500)

June 1995 - EPA Region 9 Administrative Order

August 1995 - Interagency Agreement with Bureau of Reclamation	$37,200
Ground Water Sampling and Analytical	$17,800

Fiscal Year 1996

May, 1996 - Notification from EPA Region 9 regarding release of hazardous substances	
July, 1996 - Cleanup of Dinoseb Contaminated Soils	
September, 1996 - Interagency Agreement with EPA Region 9	$64,000
Geophysical Logging of Wells	$13,500

Fiscal Year 1997

May 12, 1997 - Completion of Work Plan
August, 1997 - Modification of EPA Region 9 IAG for Transformer Removal and Disposal
Investigation of Ground Water and Soils $88,000

Fiscal Year 1998

Assessment and Cleanup September, 1998 - Awarded Assessment and Cleanup Contract ($301,824.50)	$150,000

Carlita —
Revised
Sheets
Still needs more work

Fiscal Year 1999

Assessment and Cleanup	$75,000
Emergency Response to Pesticides at Roads Shop	$43,000
Characterization of Roads Shop Yard for Pesticides	$72,000
Additional Ground Water Characterization	$15,000

Fiscal Year 2000

SRK Monitoring Well Installation and Analytical	$111,680
Removal and Disposal of Tanks and Containers	$12,120
UST Removal and Assessment	$50,000
Tribal Indirect Costs	$6,000

Fiscal Year 2001

Assessment and Cleanup	$71,195
Building Demolition	$37,210

Fiscal Year 2002

Assessment and Cleanup	$180,362
Corrective Action Plan	$100,986
Building Demolition	$4,790
New Roads Shop Design and Drum Cleanup	$23,000

Environmental Quality Services
(602) 379-6750

OCT 06 1997

Ms. Laura Bose
Chief, Ground Water Office
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, California 94105

RE: Status of Roads Shop Facility Work Plan Implementation

Dear Ms. Bose:

In our last letter to you, dated May 19, 1997, we advised you that site work was planned to begin in August 1998. On September 11, 1997, we distributed the specification for this project, Solicitation No. SB-97-0024 (copy enclosed), to prospective bidders. The bid opening date of September 25, 1997 was established.

Due to requests for clarification to the specification and extensions to the bid period, the bid opening date will be extended at least 45 days from the previously established date. At least two specification amendments will be distributed to the prospective bidders. The first amendment will extend the bid period, and the second amendment will clarify ambiguities to the specification.

Unfortunately, we must inform you that site work will be delayed, and is now planned to occur in Spring 1998. Our intent is to continue with this project, giving full consideration to the scope and the intent of the Administrative Order.

As you may be aware, a new Roads Shop Facility is planned. This facility will provide needed design support in the area of spill prevention and containment for materials used by our Roads staff.

If you have any questions or require further information, contact Mr. John Krause, Phoenix Area Hazardous Waste Coordinator, at (602) 379-6750.

Sincerely,

Acting Area Director

Enclosure

cc: -Area Facilities Management
Attn: Kathi Cheatam (w/o encl.)
Attn: Bhailal Patel (w/o encl.)
-Area Contracts
Attn: Bud Brown (w/o encl.)
-Area Roads
Attn: Vernon Palmer (w/o encl.)
-Director, Office of Trust Responsibilities
Attn: Chief, Environmental Services Staff (w/o encl.)
-Superintendent, Eastern Nevada Agency
Attn: Donna Bradley (w/o encl.)
-Facilities Management and Construction Center
Attn: Bill Collier (w/o encl.)
Attn: Cliff Mahooty (w/o encl.)
-William McConkie (w/o encl.)
Office of the Field Solicitor
Salt Lake City Field Office
125 South State Street
Salt Lake City, Utah 84138
-James Paiva (w/o encl.)
Chairman, Duck Valley Shoshone-Paiute Tribal Council
P.O. Box 219
Owyhee, Nevada 89832
-Herman Atkins (w/o encl.)
Tribal Administrator
Duck Valley Shoshone-Paiute Indian Tribes
P.O. Box 219
Owyhee, Nevada 89832
-Renee Dufault (w/o encl.)
Director, Environmental Quality
Duck Valley Shoshone-Paiute Indian Tribes
P.O. Box 219
Owyhee, Nevada 89832
-Mr. Alan Croft (w/o encl.)
Director, Div. of Environmental Health Services
Indian Health Service
3738 North 16th Street, Suite A
Phoenix, Arizona 85016-5981
-Lester Kaufman (WST-8) (w/encl.)
Chief, Office of Underground Storage Tanks
U.S. EPA Region IX
75 Hawthorne Street
San Francisco, California 94105
-Walt Guggenheimer (WST-8)
Office of Underground Storage Tanks
U.S. EPA Region IX
75 Hawthorne Street
San Francisco, California 94105

MAY 21 1997

Environmental Quality Services
(602) 379-6750

Ms. Laura Bose
Chief, Ground Water Office
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, California 94105

RE: Roads Shop Facility Work Plan

Dear Ms. Bose:

As required in the Environmental Protection Agency (EPA) Emergency Order, dated June 16, 1995, enclosed is the Roads Shop Facility Work Plan (Work Plan). To facilitate distribution of the document, three copies of the Work Plan are provided. This Work Plan meets or exceeds requirements contained in the EPA Emergency Order, and EPA Office of Underground Storage Tanks letter, dated April 18, 1995. We have also enclosed a summary of revisions made to the document since the last draft Work Plan was informally submitted to your office.

By internal memorandum dated May 15, 1997, the Acquisition Request, Statement of Work, Work Plan, Engineer's Estimate, and Statement of Qualifications was transmitted to our Contracts Branch for implementation. The intent of the Work Plan is to achieve compliance with 40 CFR requirements and best management practices as described in both EPA transmittals.

We request your review and conditional approval of the Work Plan. Remaining discussion to be added to the Work Plan include: (1) additional standard operating procedures (e.g. the conduct of a specific direct push technology or headspace analyses); (2) a Site Safety and Health Plan; (3) a project schedule; and (4) additional QA/QC as required by EPA Region IX.

It is anticipated that site work should begin in August 1997 and last for two months. Data compilation and report generation will last a minimum of one year.

We appreciate the assistance of Ms. Alisa Wong of your staff. Her assistance, coordination, expertise, and level of contribution provided in the development of the Work plan improved the quality of the Work Plan.

If you have any questions or require further information, contact John Krause, Phoenix Area Hazardous Waste Coordinator at (602) 379-6750.

Sincerely,

THEODORE R. QUASULA

Acting Area Director

Enclosures

cc: -Area Facilities Management
Attn: Chet Mills (w/o encl.)
Attn: Bhailal Patel (w/o encl.)
-Area Contracts
Attn: Bud Brown (w/o encl.)
-Area Roads
Attn: Vernon Palmer (w/o encl.)
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Attn: Bill Collier (w/o encl.)
Attn: Cliff Mahooty (w/o encl.)
-William McConkie (w/o encl.)
Office of the Field Solicitor
Salt Lake City Field Office
125 South State Street
Salt Lake City, UT 84138
-James Paiva, Chairman (w/encl.)
Duck Valley Shoshone-Paiute Tribal Council
P.O. Box 219
Owyhee, NV 89832
-Herman Atkins (w/encl.)
Tribal Administrator
Duck Valley Shoshone-Paiute Indian Tribes
P.O. Box 219
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-Renee Dufault (w/encl.)
Director, Environmental Quality
Duck Valley Shoshone-Paiute Indian Tribes
P.O. Box 219
Owyhee, NV 89832
-Jeff Baysinger (w/encl.)
Bureau of Reclamation (D-8322)
Denver Federal Center
P.O. Box 25007
Denver, CO 80225-0007
-Mary Goldade (w/encl.)
Bureau of Reclamation (D-8240)
Denver Federal Center
P.O. Box 25007
Denver, CO 80225-0007
-Mr. Joe Winkelmaier (w/encl.)
Senior Field Engineer
Indian Health Service Field Office
Sanitation Facilities Construction
P.O. Box 1806
Elko, NV 89803
-Mr. Alan Croft (w/encl.)
Dir., Div. of Environmental Health Services
Indian Health Service
3738 N. 16th Street, Suite A
Phoenix, AZ 85016-5981
-Lester Kaufman (WST-8)(w/encl.)
Chief, Office of Underground Storage Tanks
U.S. EPA Region IX
75 Hawthorne Street
San Francisco, CA 94105
-Walt Guggenheimer (WST-8)
Office of Underground Storage Tanks
U.S. EPA Region IX
75 Hawthorne Street
San Francisco, CA 94105

JFKRAUSE:hw 05/21/97
4304.2 Eastern Nevada Agency - Roads Shop Work Plan

Responses to Environmental Protection Agency Region IX Comments dated October 8, 1996

Responses are only provided to comments that recommend further additions or editions to the Work Plan. Responses to EPA comments are as follows:

Responses to October 6, 1996 comments in letter:

1. The completion of geophysical logging is described in Sections 1.1 and 3.6, pages 1 and 9, respectively of the Work Plan.

2. A schedule of activities or project schedule has been added and is discussed in Section 1.3, page 3 of the Work Plan.

3. Appendix E is reserved for the inclusion of Client Request Forms. The Contractor will be responsible to fulfill this requirement.

Responses to October 6, 1996 comments in attachment.

Major Concerns:

1. Methods of sample collection for soil and ground water are discussed in Section 5, pages 13, 14, and 15 of the Work Plan.

2. Associated with the conduct of field sampling, the QAPP is referenced in Sections 1, 2, and 5.

3. Standard operating procedures (SOP) for sampling methods is found in Section 5; however other SOPs still are required to be prepared for finalization of the Work Plan. The Contractor will be responsible to fulfill this requirement.

4. Adjustments to the Work Plan have been made to indicate that 10% of field samples will be duplicates. A discussion concerning background sampling is found in Section 2, page 4 of the Work Plan. Rationale for QC sample locations and collection procedures is found in Section 5.

5. The completion of a Site Safety and Health Plan (SSHP) will be the responsibility of the Contractor.

Other Concerns:

2A. Reference Response #2 of Major Concerns.

3A. A response to this comment will be the responsibility of the Contractor.

3B. Sampling methods have been added and are discussed in Section 5.

4A. The Contractor is to provide the SSHP.

4F. Table 5.0-1 of the QAPP is referenced in Section 5 of the Work Plan.

4G. The Contractor will be responsible for the inclusion of Client Request Forms.

5. Quality control samples shall be "blind" to the laboratory. This requirement is indicated in Section 4.0, page 19, of the QAPP. The Contractor will be required to establish protocol to insure this requirement. The "QC" designation has been deleted from Table 4, page 12 of the Work Plan.

7C. The title of Figure 3.0-1 is "Example Chain of Custody Form". This form indicates specific information to include on the form. The title of Figure 3.0-2 is "Chain of Custody Information". This form provides additional descriptive information associated with the contents of a chain of custody form.

7D. Figure 2.10-1, "Example Sample Label", page 13 of the QAPP is referenced in Section 5, page 13 of the Work Plan.

7E. Figure 2.10-2, "Example Chain of Custody Label", page 14 of the QAPP is referenced in Section 5, page 13 of the Work Plan.

7F. Section 3.0 of the QAPP is referenced in Section 5, page 13 of the Work Plan.

8A. SOPs not provided in the May 12, 1997 Work Plan, to include the QAPP, are the responsibility of the Contractor.

8B. Ground water measurement protocol is revised and is contained in Section 2.3, page 7 of the QAPP, and referenced in Section 3.7, page 9 of the Work Plan.

8C. The detection and measurement of NAPLs is discussed in Section 3.7, page 10 of the Work Plan.

9B. Geophysical logging has been performed. Information concerning this activity is found in Appendix B.

9C. The sentence "Purged groundwater and rinsate water from monitoring will not be required." is deleted from Section 7.6, page 34 of the Work Plan.

10A-C These SOPs are not included at this time. These SOPs are the responsibility of the Contractor.

Additional Comments Noted During Review:

1. Both the Work Plan and the QAPP will be available for review at the site and at the laboratory.

2. Design and construction of new monitoring wells will be conducted by the Tribe.

3. In Section 5.2, page 16, "representative" is changed to "composite". Further discussion is provided in Section 5, page 13 of the Work Plan.

4. Sampling numbers and schedules is the responsibility of the Contractor.

6. A title and approval cover page is provided; however, if the QA/QC will also approve, a modification or addendum form can be assembled by the Bureau of Indian Affairs (BIA).

Distribution of documents will be provided by the BIA. These documents and future information are planned to be distributed to the Tribe, EPA, DOI Solicitor, Indian Health Service, and the Bureau of Reclamation. A specific distribution sheet is not planned; however, if one is requested, please indicate how it should be incorporated into the process.

The organization to accomplish the objectives of the Work Plan is described in: (1) Section 1.2, page 2 of the Work Plan; and (2) Section 1.1, page 1 of the QAPP.

Specific field sampling procedures are described in Section 5 of the Work Plan. Laboratory procedures will conform to information included

in the Work Plan, to include the QAPP, and EPA Region IX protocols. Any additional specific sampling procedures, not addressed in this Work Plan and required by EPA, are the responsibility of the Contractor.

Any additional information required associated with: (1) specific data management information; (2) specific information on audits/oversight and reports, and (3) the equipment that is planned is the responsibility of the Contractor.

Environmental Quality Services
(602) 379-6750

NOV 15 1996

Through: Superintendent, Eastern Nevada Agency

Honorable James Paiva

Chairman, Shoshone-Paiute Tribal Council

Dear Mr. Paiva:

As you may be aware, we are nearing finalization of the Roads Shop Work Plan (Work Plan) to characterize petroleum contamination in the soils and ground water in the community of Owyhee, Nevada. On November 7, 1996, Mr. Herman Atkins, Tribal Administrator, Duck Valley Shoshone-Paiute Tribes contacted the Phoenix Area Office (PAO) to request a copy of this Work Plan and a status report regarding implementation of the plan.

We understand that Mr. Atkins plans to present this information at a November 13, 1996 meeting of the Shoshone-Paiute Council. Under a previous transmittal, we have sent the Work Plan, Work Plan Drawings #1 and #2, and the geophysical logging report.

Initiation of the work described in the Work Plan is expected to commence in 1997 as funds become available. This work is tentatively planned for June 1997. Excavation and removal activities are expected to last about three months, while sampling, monitoring, and analysis activities are expected to last one year. Subsequent to the completion of this work, remedial actions may be necessary. Remedial actions, if necessary, may not be implemented until 1999 as funds become available.

Regarding well activities:

Geophysical logging occurred in Well #1 (30 hp), Well #2 (7.5 hp), and Well #3 (10 hp). Drawing #2 indicates the location of these wells. This work was conducted to gain additional information concerning well construction. During this work, the pumps were removed. Since Wells #1 and #2 may possibly be modified or closed and have exhibited petroleum contamination, the pumps were not reinstalled in these wells. However, the pump was reinstalled in Well #3 as this well has not exhibited petroleum contamination.

The well, designated as Well #4, is located about one mile north of the area to be investigated. Since this well is not within the area to be investigated, monitoring of the well, other than initial sampling and analysis, will not occur.

We plan to install three shallow, less than 30 feet in depth, wells. These wells will be identified as Wells #5, #6, and #7 and are shown on Drawing #2. The function of these wells is to provide additional ground water data. This data will provide information necessary to estimate ground water direction, gradient, and quality.

We plan to conduct quarterly sampling and analyses, and monthly water level monitoring in Wells #3, #5, #6, and #7. This activity is further described in Sections 3.7 and 5.6 of the work plan.

Regarding removal of existing Bureau of Indian Affairs (BIA) facilities:

First, we plan to remove the BIA heating oil line system and assess the subsurface for the presence of heating oil. Since petroleum contaminated soils (PCS) were identified during a water line installation in November 1995, we plan to remove PCS during this activity. Refer to Sections 3.2, 3.3, and 5.3 of the Work Plan, and Drawing #2.

Second, we plan to remove the Roads Shop drain system, as feasible. During this removal, we plan to sample and analyze the soils and ground water under the drain line including the area of its discharge for petroleum constituents and metals. Refer to Sections 3.2, 3.3, and 5.1 of the Work Plan, and Drawing #1.

Third, we plan to remove a heating oil underground storage tank (UST) system identified nearby one of the heating oil line laterals, south of Building #313. During this removal, we plan to sample and analyze the subsurface for heating oil. Refer to Sections 3.5 and 5.4 of the Work Plan, and Drawing #2.

Fourth, we plan to remove a slab located west of the Roads Shop and PCS in the yard area. Excavation will proceed until sampling and analysis provides verification that the petroleum contamination has been removed, as feasible.

Regarding assessment of past BIA facility operations:

We plan to assess the subsurface of three former diesel UST sites located in the area of the Roads Shop, Jail and Power Plant. Refer to Sections 3.5 and 5.4 of the Work Plan, and Drawing #2.

Also, we plan to assess the subsurface of the former gasoline aboveground storage tank site located in an area northeast of the Roads Shop. Refer to Sections 3.5 and 5.5 of the Work Plan, and Drawing #1.

Regarding characterization of the soils and ground water:

Using direct push technology or similar drilling method, we plan to conduct ground water sampling and analyses in the area of the Roads Shop, the drinking water wells, and the heating oil lines. Refer to Sections 3.9 and 5.6 of the Work Plan, and Drawing #2. In addition, through the above removals and assessments, we will be able to map the concentrations of petroleum in the soils and ground water.

Regarding the disposition of petroleum contaminated soils:

We believe at least two leak/spill sources are responsible for contaminants identified in the ground water. We also believe, and as analytical documentation substantiates, that materials released to the ground water include oil and gasoline.

In addressing the treatment or disposal of PCS removed during the project, we have determined that the costs for transportation, and treatment or disposal to be excessive as compared to onsite treatment of the PCS. We initially propose to conduct onsite treatment of PCS through bioremediation.

Briefly, planned bioremediation works as follows: Similar to humans, microorganisms require oxygen, water, and nutrients (e.g. carbon and nitrogen) to survive. Microorganisms, in processing oxygen, water, and nutrients, create carbon dioxide and water.

We initially anticipate, and plan to include provisions in the specification, the removal of approximately 2000 cubic yards of PCS from areas immediately adjacent to contaminant sources and pathways. Limitations exist regarding the removal of PCS. If widespread petroleum contamination of soils is discovered around sources or along pathways, in situ or in place treatment may be necessary.

To establish a treatment area, we will require a minimum of two acres. Although the bioremedial process is more cost effective than offsite disposal or

treatment, we estimate that it may take one to two years to bioremediate the soils. Discussions will be necessary associated with lease and fee arrangements for using a site and treating the soils, respectively.

At your request and as we get closer to the implementation of the Work Plan, PAO staff will be available to present Work Plan information, and answer Work Plan related questions to the Shoshone-Paiute Council.

If you have any questions or require further information, please contact either Mr. John Krause, PAO Hazardous Waste Coordinator at (602) 379-6750 or Mr. Steven Tibbetts, Superintendent, Eastern Nevada Agency at (702) 738-0569.

Sincerely,

/s/ Barry W. Welch

Acting Area Director

cc: Area Fac. Mgmt.
Attn: Chuck Thomas
Attn: Bhailal Patel
Area Br. of Roads
Attn: Vernon Palmer
Supt., Eastern Nevada Agency
Attn: Donna Bradley
Attn: Wilt Blossom
Dir., Office of Trust Responsibilities
Attn: Chief, Environmental Services Staff
Dir., Office of Construction Management
Attn: Kurt Gernerd
Fac. Mgmt. & Construction Center
Attn: Clifford Mahooty
Mr. William McConkie
Office of the Field Solicitor
Salt Lake City Field Office
125 South State Street
Salt Lake City, Utah 84138
Mr. Herman Atkins
Tribal Administrator
Duck Valley Shoshone-Paiute Tribes
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Ms. Alisa Wong
Drinking Water Protection Branch
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Mr. Walt Guggenheimer
Office of Underground Storage Tanks
U.S. EPA Region IX
75 Hawthorne Street
San Francisco, California 94105

JFKRAUSE:hw 11/13/96
4304.2 E. Nev. Agcy. - Roads Shop Work Plan

Environmental Quality Services
(602) 379-6750

DEC 14 1995

Through: Superintendent, Eastern Nevada Agency

Mr. Lindsey Manning

Chairman, Shoshone-Paiute Tribal Council

Dear Mr. Manning:

As you are aware, we are currently developing a work plan to address the ground water petroleum contamination issue in the community of Owyhee, Nevada. This work plan will generally accomplish the following:

1. Characterization of construction of three drinking water wells in the community through geophysical logging.

2. Complete removal of the Bureau of Indian Affairs (BIA) heating oil line system and assessment of subsurface for the presence of heating oil.

3. Removal of the BIA Roads Shop Facility (Facility) drain system, as feasible, and investigation of soils and ground water under the drain line including the area of its discharge for petroleum constituents and metals.

4. Removal and assessment of petroleum contaminated soils (PCS) in the area of the Facility and heating oil line, or as discovered, as feasible.

5. Assessment of three former diesel underground storage tank (UST) sites located in the area of the Facility, Jail and Power Plant.

6. Assessment of the former gasoline aboveground storage tank (AST) site located in an area northeast of the Facility.

7. Removal and assessment of a heating oil UST system identified nearby one of the heating oil line laterals.

8. Characterization of soils and ground water petroleum contamination through the conduct of the above work, and additional ground water data collection.

Work in these areas is expected to commence in 1996 as funds become available. Approval of the work plan by Tribal and Environmental Protection Agency staff will be necessary prior to the conduct of work as described in the plan.

As presented in our letter dated February 6, 1995 to you, we believe at least two leak/spill sources are responsible for contaminants identified in the ground water. We also believe, and as analytical documentation substantiates, that materials released to the ground water include oil and gasoline.

The recent installation of a water line has revealed evidence of PCS in the subsurface soils at three separate locations along the alignment of the water line. Two locations were identified in the area of the heating oil line with indications that the contaminant is heating oil or diesel fuel, while one location was identified in an area northeast of the Facility with indications that the contaminant is gasoline. These discoveries provide the following indications:

1. Site 1 (East of Highway 51, in the area of the Power Plant): Leaks and/or spills may have occurred associated with the operation of the former diesel UST at the Power Plant, the heating oil line, and/or the 16,000-gallon heating oil AST.

2. Site 2 (West of Highway 51 and south-southeast of the 10 hp pump facility): The heating oil line may have leaked in this area.

3. Site 3 (Northeast of Facility within Facility Yard): Spills and/or leaks of gasoline may have occurred at the former gasoline AST located in the northeast yard area of the Facility.

Information associated with these discoveries are being incorporated into the work plan.

In addressing the treatment or disposal of PCS removed during the project, we have determined that the costs for transportation, and treatment or disposal to be excessive as compared to onsite treatment of the PCS. We initially propose to conduct onsite treatment of diesel fuel/heating oil (oil) contaminated soils through bioremediation.

Generally speaking, planned bioremediation works as follows: Similar to humans, microorganisms require oxygen, water, and nutrients (e.g. carbon and nitrogen) to survive. Microorganisms, in processing oxygen, water, and nutrients, create carbon dioxide and water.

The treatment of the oil contaminated soils would occur as follows: First, the excavated soils would be mixed with manure or fertilizer. The mixing in of these materials provides nutrients, principally nitrogen. Carbon, as a constituent of oil, is already present. Thus, with an abundance of nutrients, the activity of microorganisms will increase. Second, the soils are spread out such that the maximum thickness is about two feet. This is to allow oxygen to access all locations within the soils. Increased oxygen leads to increased microorganism activity. Third, these soils are then moistened as necessary to insure water accesses all locations within the soils. Fourth, these soils will be periodically mixed to insure consistent treatment of all the soils. Once these nutrients (principally the carbon in the oil and the nitrogen in the manure or fertilizer) have

been consumed, the microorganisms will die.

The treatment of the gasoline contaminated soils would not require any addition of nutrients or water. When the gasoline contaminated soils are spread out to a maximum thickness of two feet, the gasoline will readily volatilize from the soils.

We initially anticipate, and plan to include provisions in our work plan/specification, the removal of approximately 2000 cubic yards of PCS from areas immediately adjacent to contaminant sources and pathways. Limitations exist regarding the removal of PCS. If widespread petroleum contamination of soils is discovered around sources or along pathways, in situ or in place treatment may be necessary.

To establish a treatment area, we will require a minimum of two acres. Although the bioremedial process is more cost effective than offsite disposal or treatment, we estimate that it may take one to two years to bioremediate the soils. In addition, we will require a backfill source.

We request from the Duck Valley Shoshone-Paiute Tribes (Tribe):

1. A determination as to whether onsite remediation as described above will be allowed on the reservation.

2. If this bioremedial alternative is allowed, a location suitable to the Tribe for the conduct of soil treatment.

3. A location to obtain backfill.

If we implement this described bioremedial approach, discussions will be necessary associated with lease and fee arrangements for using the site and treating the soils, respectively.

Responses to our request should be directed to Mr. John Krause, Phoenix Area Hazardous Waste Coordinator at (602) 379-6750. If you have any questions, please contact either Mr. Krause or Mr. Steven Tibbetts, Superintendent, Eastern Nevada Agency at (702) 738-0569.

Sincerely,

/s/ VERNON F. PALMER

Acting Area Director

cc: Area Facilities Management
Attention: Chuck Thomas
Attention: Bhailal Patel
Area Roads
Attention: Vernon Palmer
Superintendent, Eastern Nevada Agency
Attention: Donna Bradley
Attention: Wilt Blossom
Director, Office of Trust Responsibilities
Attention: Chief, Environmental Services Staff
Director, Office of Construction Management
Attention: Kurt Gernerd
Facilities Management and Construction Center
Attention: Clifford Mahooty
Mr. William McConkie
Office of the Field Solicitor
Salt Lake City Field Office
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Mr. William Beck
Environmental Protection Specialist
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Ms. Patricia Eklund
Chief, Office of Underground Storage Tanks
U.S. EPA Region IX
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JFKRAUSE ldw 12/14/95

4304.2 Duck Valley Tribe - Community of Owyhee, Nevada Ground Water Contaminant Source Assessment

Environmental Quality Services
(602) 379-6750

Ms. Loretta K. Barsamian
Chief, Drinking Water Protection Branch
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

JUN 21 1995

Re: Administrative Order Regarding Past and Present Contaminant Activities at the Bureau of Indian Affairs (BIA) Eastern Nevada Agency Roads Shop Facility (Facility) Located in Owyhee, Nevada, Docket No. UIC-EO-95-001

Dear Ms. Barsamian:

We are in receipt of your letter dated June 16, 1995. In response to your transmittal, we offer the following:

In conformance with Paragraph 17 of the subject order (Order), BIA Eastern Nevada Agency staff have been directed to: (1) cease any discharge to the Facility floor drain; and (2) cease any discharge of fluids which may potentially contain petroleum constituents onto unlined dirt areas of the Facility.

As we understand, there was and is only one drain line that leads to the former well located west of the Facility. This drain line begins at the Facility floor drain located in the south, center area of the Facility foundation and terminates at an approximate depth of three feet at the former location of the well.

Since water runoff from rain events has the ability to enter the Facility floor drain, we are currently investigating ways to temporarily seal the drain so as not to hamper future investigative efforts as described in the Order.

As an update, we have performed the following associated with Paragraphs 4, 8 and 41 of the Order:

1. Paragraph 4: The materials in the floor drain have been removed and are presently contained in five 55-gallon drums with 85-gallon overpacks.

2. Paragraph 8: These materials have been characterized, consolidated, packaged, and labeled.

3. Paragraph 41: Through a BIA contract, MSE, Inc. has performed characterization, packaging, and labeling of materials discussed in Paragraphs 4 and 8. We have forwarded the analytical data concerning materials in the floor drain, samples SYD-801 and SYD-802, to MSE, Inc. for their review and inclusion into their report. MSE, Inc. will be providing a documentation report to us describing the recommended disposition of the above mentioned materials with associated cost estimates. Pertinent elements of this documention report will be incorporated into the Work Plan.

Also, since our receipt of the EPA letter dated April 10, 1995 from Ms. Patricia D. Eklund, Chief, Office of Underground Storage Tanks (OUST), Phoenix Area Office (PAO) Facilities Management has forwarded an initial funding request memorandum dated April 28, 1995 to BIA Facilities Management and Construction Center.

Our tentative planned approach is as follows: First, we are providing written certification that discharge as described by Paragraph 17 of the Order has ceased. Also, we are pursuing funding to accomplish the work. Second, we plan to develop one Scope of Work which will, as feasible, encompass provisions of Paragraphs 21 through 45 of the Order and the April 10, 1995 EPA OUST letter. We believe inclusion of all these tasks is necessary for two reasons: (1) Contracting the work is time consuming, thus one contract is preferable; and (2) in order to maintain consistency and efficiency, one Contractor is preferable. This Scope of Work will essentially act as the Work Plan, although the selected Contractor will be required to complete the Work Plan as a submittal in accordance with the specifications of the Scope of Work. Third, this Scope of Work, or portions thereof, will be transmitted to EPA and representatives of the Duck Valley Shoshone-Paiute Tribes for review and approval. Fourth, the contract will then be awarded and the work will proceed. Fifth, results from this work will then be reviewed. At this time, the remaining issues will be discussed in order to determine the next plan of action.

With each transmittal, we will identify any current concerns we may have. To assist in the development of the Scope of Work, please clarify the definition of "site" as mentioned in the Order.

We will strive to meet the time requirements as identified in the Order.

I certify under penalty of law that this letter was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the persons directly responsible for gathering the information, I certify that the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the

possibility of fine and imprisonment for knowing violations.

If you have any comments, questions, concerns, or require further information, please contact Mr. John Krause, PAO Hazardous Waste Coordinator at (602) 379-6750.

Sincerely,

/s/ Frank Jones

Area Director

cc: Ms. Cynthia Sans
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Area Roads
Attention: Vernon Palmer
Area Contracts
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Director, Office of Trust Responsibilities
Attention: Chief, Environmental Services
Director, Office of Construction Management
Attention: Kurt Gernerd
Facilities Management and Construction Center
Attention: Cliff Mahooty

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JFKRAUSE 06/21/95